921   **Appendix A – Terminology**

922   (Informative)

923   This appendix contains terms used throughout this document, with reference to broader

924   technical glossaries developed by other organizations.

925   Definitions for the terms and concepts presented in this section have been extracted from a

926   variety of sources. Where appropriate, language has been retained from existing

927   definitions, including from the Spatial Data Transfer Standard (SDTS), by the FGDC

928   Ground Transportation Subcommittee, the NCHRP Report 359, and concept and

929   workshop papers recently authored by Butler, Dueker, Fletcher, Vonderohe, et al. When

930   utilized, specific references to these sources appear in parentheses following the

931   definitions.

932   **Arc**. A locus of points that forms a curve that is defined by a mathematical expression

933   (SDTS).

934   **Chain**. A directed non-branching sequence of nonintersecting line segments and (or) arcs

935   bounded by nodes, not necessarily distinct, at each end (SDTS).

936   **Framework Transportation Reference Point (FTRP)**. The specified location of a

937   endpoint of a Framework Transportation Segment (FTSeg), or a reference point offset

938   along the length of the FTSeg, on a physical transportation system.

939   **Framework Transportation Segment (FTSeg)**. A specified directed path between two

940   Framework Transportation Segment Reference Points along a physical transportation

941   system that identifies a unique segment of that physical system.

942   **Line**. A generic term for a linear object. Lines can be defined variously as "line segment,"

943   "string," "arc," or "chain." Lines have shape and position.

944   **Line segment**. A direct line between two points (SDTS).

945   **Linear datum**. The collection of objects which serve as the basis for locating the linear

946   referencing system in the real world. The datum relates the data base representation to the

947   real world and provides the domain for transformations among linear referencing systems

948   and among geographic representations. The datum consists of a connected set of anchor

949   sections that have anchor points at their junctions and termini (Fletcher). A linear datum is

950   not based upon a network with GIS geometry, but instead is properly considered to be an

951   abstract representation of objects (lines, nodes) that describes how the objects are related.

952   **Linear Referencing Method** (LRM). A mechanism for finding and stating the location of

953   an unknown point along a network by referencing it to a known point (Vonderohe).

954   Common methods include milepost, link-node, route-segment-offset, and address.

955   **Linear Referencing System** (LRS). The procedures that relate all location referencing

956   methods to each other, including office and field techniques for storing, maintaining, and

957   retrieving location information (O'Neill).

958   **Link**. A topological connection between two ordered nodes (Vonderohe, SDTS). Links

959   do not necessarily have shape or position.

960   **Link-Node**. A location referencing method based upon a unique numbering system

961   describing links (or arcs) and nodes; it does not inherently contain measurement data.

962   **Location.** The name given to a specific point on a highway for which an identification of

963   its linear position with respect to a known point is desired. (TRB, 1974)

964   **Locational Referencing Method (Highway)**. The technique used to identify a specific

965   point (location) or segment of a highway, either in the field or in the office. (TRB, 1974)

966   **Locational Referencing System (Highway)**. The total set of procedures for determining

967   and retaining a record of specific points along a highway. The system includes the

968   location reference method(s), together with the procedures for storing, maintaining, and

969   retrieving location information about the points and segments on the highways. (TRB,

970   1974)

971   **Milepost/Milepoint/Reference Post**. A commonly used location referencing method.

972   Location of features is specified as a measured distance or offset from a known point such

973   as an intersection. In the field, reference posts may be used as the primary known point.

974   **Network**. A graph without two-dimensional objects or chains. An aggregation of nodes

975   and links representing a topological object (SDTS, Vonderohe). A network implies that

976   there is a graphic connectivity, or topology, among elements.

977   **Node**. A zero-dimensional object that is a topological junction of two or more links, or an

978   end point of a link or chain (Vonderohe, SDTS).

979   **Point.** A zero-dimensional object that specifies geometric location. A pair (e.g., "x,y") or

980   triplet (e.g., "x,y,z") of coordinates specifies the location (SDTS).

981   **String**. A connected non-branching sequence of line segments specified as the ordered

982   sequence of points between those line segments (SDTS).

983   **Topology**. A branch of mathematics concerned with those properties of geometry that are

984   independent of a distance metric and are unchanged by any continuous deformation.

985   Topology, as used in cartography, concerns those characteristics of geometric objects that

986   do not depend on measurement in a coordinate system. (Chrisman)

987   **Traversal**. An ordered and directed, but not necessarily connected, set of whole links

988   (Vonderohe).